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## THE WEALTH GENERATION OPPORTUNITIES OF AFRICAN FISH RESOURCES

### Key Messages

- Africa has extensive and extremely valuable fish resources which are exploited by the marine, inland and aquaculture sub-sectors. The exploitation of these resources contributes to African economies, employment, food supply and welfare.
- Nonetheless, the full potential economic benefits are not being realized, largely because of the lack of awareness amongst key policy makers of the true value of the fish resources and how this value can best be realized.
- **Africa's fish resources represent** renewable natural capital capable of generating substantial amounts of wealth over time, which could make a significant and sustainable contribution to economic growth and development in Africa.
- A conservative estimate of the potential wealth that could be generated from African fish resources is at least US \$2 billion per annum. At a discount rate of 9%, the capitalized value of the African fish resources would be at least US\$22 billion.
- Why is this a conservative figure? There are a number of reasons, the most important of which is that although the quantity of fish resources is limited by nature, there is no similar limit to the sustainable value or wealth that can be generated from their exploitation.
- In order to realize this massive potential, the real challenge for fishery managers is therefore to create an enabling environment that provides fishers with incentives and confidence to invest in the fish resource itself, in the same way that they have the incentives and confidence to invest in fishing vessels and gear. Such an enabling environment should then begin to deliver sustainable growth, helping this much ignored sector to contribute much more to African economies.
- The fundamental question is: how can the wealth potential of fish resources be realized in practice? Paper 2 discusses the key policy and governance reforms required to address the question successfully.

## 1. The issues

Africa has major fish resources, which are exploited by the marine, inland and aquaculture sectors to produce substantial benefits for Africa including employment and income, food supply, commodities for trade and contributions to GDP. Table 1 summarizes these benefits.

TABLE 1. AFRICAN FISHERIES – CURRENT BENEFITS	
Fisheries production	Marine capture: 4.56 Mt (5% global) Inland capture: 2.3 Mt (24% global) Aquaculture: 0.76 Mt (<1% global) Total: 7.68 Mt (5% global)
Value of fisheries production (first sale)	US\$ 4,861 million
Employment and livelihoods	3.6 million fishers (up to four times more in ancillary industries)
Food supply	8.3 kg/capita (50% of world average)
Protein consumption	21% daily protein intake (on average)
Trade	Net exporter (US \$4.4 billion or 5% global trade)
GDP contribution	<2% on average (but much higher for some countries)
Source: United Nations Food and Agriculture Organization of the UN (2008)	

However, these resources are capable of making a far greater contribution to sustainable development through their potential to generate wealth (Box 1).

### Box 1. “Wealth-based management” and its importance to fisheries policy

First, what do we mean by wealth? In economic terms, wealth is *the value of assets owned by a person or community*. Other broader definitions of wealth are also possible.

In fisheries, however, there is one aspect of wealth that is of particular importance. Whilst there is general recognition of wealth in the form of visible assets (fishing vessels, gear, infrastructure, etc.), the crucial issue is the potential wealth represented by the fish resource itself.

Fisheries management arrangements that aim to unlock this wealth begin from the observation that fish resources constitute valuable natural assets. International “best practice” success stories make it clear that building on resource wealth will not only deliver operational efficiency – something that fisheries at all levels strive for - but also achieve ecological goal of stock conservation, and contribute to improved welfare outcomes .

Fish resource wealth is critical for policy for at least two main reasons.

1. This wealth is the main driver of overfishing and overcapacity **in the world’s fisheries today**. In fisheries where access to the resource is free and open, fishers have no incentive to conserve the resource resulting in a *race to fish*. And management systems that fail to take wealth into account will lead to similar outcomes. In other words, to be successful, managers have little option but to take fish resource wealth into consideration.
2. Instead of driving overexploitation, this wealth can contribute to national economies, jobs and food. Well-managed fish stocks are like perpetual oil wells – they are capable of generating a sustainable flow of wealth that can be measured as a **resource rent** (which is, broadly, an economic surplus over and above normal operating profits).

A conservative estimate of the potential wealth that could be generated from African fish resources is at least US \$2 billion per annum. (Box 2).

**Box 2. Fish wealth – the potential and some empirical examples of performance**

Empirical evidence from various fisheries around the world suggests that under effective management resource rents can be generated that represent between 30% and 70% of the first sale value.

For Africa's fisheries in total, the first sale value is approximately US\$ 4,861 million. Using a conservative rule of thumb that the resource rent which could be generated under effective management is 40% of turnover, then an initial estimate of the potential annual fish resource rent generation for Africa is approximately US \$2 billion.

This represents a renewable rent, which can increase with management effectiveness, fleet development and efficiency and improved marketing and trade.

Capitalized at a discount rate of 9%, this estimate would suggest that the implicit value of African fish resources is at least US\$22 billion.

This estimate is conservative for a number of reasons. First, the 40% ratio used is low because as mentioned above fisheries show a range of percentages. The ratio in the Sunken Billions report (World Bank 2009) is in excess of 60%. Second, the data above refer to African fish landings only but a substantial proportion of African fish resources are not landed by Africans. Third, the data available on landings themselves probably underestimate the true figures for various reasons.

The most important issue however is that the rent estimates should not be interpreted to mean that there is some fixed amount of resource rent available. On the contrary, international experience shows that as institutional arrangements change, the rents generated by the fishing industry can be expected to grow sustainably.

The Sunken Billions report estimates that currently the world's fisheries produce zero net wealth (in fact, taking subsidies into account the outcome is negative). Yet with rational exploitation, the fisheries could produce around US \$50 billion per annum. Other estimates put this figure far higher.

Fact or fiction? Some countries have reformed some or all of their fisheries with the result that both their economic and ecological performance has improved. To give just two examples:

- annual wealth generated from fisheries in New Zealand in 2008 was about US\$ 200 million (with a capital value of US \$2.25 billion).
- Namibia, the hake fishery generates US \$29 million annually and this could be increased further.

In its 2005 report "Where is the Wealth of Nations?", the World Bank observed that "Without the creation of a surplus for investment there is no way for countries to escape low-level subsistence equilibrium." Rents from the exploitation of fish (and other natural) resources can contribute renewably to this surplus and hence to economic growth. The Bank report also notes that to do so, depends on the capacity of institutions to create incentives for the generation of resource rents, and to direct at least some of these rents into profitable investments including welfare. Where fisheries have operated successfully, such institutions have been instrumental in unlocking the potential economic value of fisheries. Resource policy, fiscal policy and the political economy all have a major role to play in this transformation.

The size of this contribution will depend on the physical extent of the resource, on its value and on the difficulty (and hence cost) of exploiting it. Some fish resources will be very limited so that only very local contributions can be expected but others may have a national, or even international, impact.

The challenge for fishery managers is to create an enabling environment that provides fishers with incentives and confidence to invest in the fish resource. Fishers already have the incentives and confidence to invest in fishing vessels and gear, because legal and fiscal frameworks clarify that the fishers own the vessels etc and will receive an appropriate and sufficient share of the wealth generated by their operation. Similar frameworks are required for the fish resource itself.

International best practice is emerging that supports the conclusion that successful fisheries involve appropriate combinations of use rights and fiscal arrangements, supported by other measures as necessary. Whilst there is certainly no unique solution, a growing body of international empirical evidence from countries with successful fisheries illustrates the kind of fisheries policy and governance reforms that are required. In addition to the countries mentioned in Box 2, other countries with increasingly successful fisheries include Iceland, Norway, the USA, Canada, and Australia. A major challenge for Africa is to identify and document existing good practice examples to complement the Namibia case mentioned in Box 2 and to develop more cases of best practice by fostering peer to peer transferability.

Wealth-based fisheries management (Box 1) will enable fish resources to fulfil their potential contribution to the investable surplus crucial to economic development. In the process, it will not only increase the contribution of the sector to GDP, but will also change the structure of this contribution. The precise change will depend on the particular circumstances of the fishery and on choices made concerning use rights and fiscal arrangements. It is likely however that there will be a reduction in the direct labour share and an increase in profits and public sector revenues. Such changes can lead to some difficult issues, and it will be important to analyse potential impacts of policy change and to identify mitigating measures as necessary.

It is also important to realize that the *renewable* yet *depletable* nature of fish resources complicates the relationship between resource wealth, exploitation and GDP. Great care needs to be taken when using GDP contribution as an indicator of fisheries performance (Box 3).

#### Box 3. Fish resource wealth and GDP

Fish resource wealth offers the potential for fish resource exploitation to contribute to economic growth and GDP. However, before addressing this issue, it is important to note that very great care is required in the interpretation of this contribution.

It is widely recognized that GDP can be a misleading indicator of economic performance. For example, the recent oil spillage in the Gulf of Mexico will have increased GDP.

And in overfished fisheries exploitation activities will continue to produce value-added and hence a contribution to GDP, provided the resource does not collapse, in which case all associated GDP will also collapse.

When considering GDP as an indicator in fisheries there are two important issues to address. First, are

decision-makers correctly informed of the GDP that currently depends on the sustainability of the resource? Second, are decision-makers aware of the potential contribution to GDP under different exploitation and management arrangements?

As regards the first question, recent work by World Bank (2010) argues that the GDP that depends on fish resources and their exploitation as reported in the national accounts is typically under-estimated for a variety of reasons (e.g. because the value-added attributed to fish does not cover the complete fisheries value chain, or the focus may be limited only to large-scale commercial activities, or important recreational fishing activities may be excluded). The study concludes that: “The global aggregate capture fisheries GDP (fishing and postharvest value-added combined) is slightly below 1 percent of global GDP”, which is clearly a significant amount.

The second question is not addressed directly in World Bank (2010). However, an earlier World Bank report “The Sunken Billions” (2009) sheds some light on the question. This report estimates that globally \$50 billion of resource rents are lost annually. Such resource rents are of the utmost importance because they represent a pure wealth contribution to GDP.

Globally, therefore, it appears that fisheries GDP is currently under-estimated and that the potential for an increased contribution in the future following fisheries reform is unrecognized.

A similar conclusion holds for many countries. Improved information on these two factors is essential for decision-makers in the development of fisheries policy.

A focus on fish resource wealth is also required in order to ensure that the results of other dimensions of fisheries policy are sustainable. The order in which things are done is important. For example, well-intentioned efforts to supporting trade and value addition through infrastructure and market access will end up worsening resource depletion unless they are preceded by, or at the very least coupled with, fisheries management reform. This is because otherwise increases in prices and profitability will simply attract extra fishing capacity and effort.

Similar issues arise in the case of pirate fishing to which developing countries are particularly vulnerable. Fishing is often a vital source of income in such countries and fish may be a crucial component of food security. Yet, whilst it is clearly attractive that fishing possibilities should be undertaken by domestic fishers, the policy to remove pirate fishers may have unintended consequences in the absence of an effective domestic fisheries policy. Removing a lump of fishing effort (illegal or not) will increase the attractiveness of fishing to legitimate domestic fishers. If nothing exists to prevent such fishers from expanding their effort (or attempting to do so) then the initial policy gains may be transformed into domestic overcapacity or lost altogether if domestic fishing effort expands enough. Once again the order of policy events matters.

In summary, there are three clear challenges for African fisheries:

- identifying wealth generation potential of different fisheries,
- designing and implementing the best policy and management options for each fishery taking into account the value of the resource
- building stakeholder awareness of the positive impacts of new approaches to fisheries exploitation and management.

The next section elaborates on these points.

## 2. The Way forward

The previous section has shown that fish resource wealth should be a crucial element of fisheries strategy and policy. Although taking wealth into account does not pre-determine the policy choices, it is an important input into such choices and will affect their results.

But for such wealth to influence fisheries policy, the first requirement is to generate information about it. Currently, decision-makers, fishers and other stakeholders are generally unaware of the wealth generation possibilities of their fish resources.

This section considers how a shared understanding of these possibilities can be developed. This process will contribute to creating a common vision for the future of fisheries and facilitating public and private sector commitment to reform.

### Measuring wealth

Appropriate assessment methodologies must be developed to estimate fish resource wealth for different resource types. Such methodologies need to take account of appropriate economic, social, environmental and governance perspectives.

### Identifying benefits

Applying the methodologies will enable wealth estimates to be made. It will be difficult to produce such information other than on the basis of collaboration between the public and private sectors. But in any event such a collaborative approach is ideal because it will provide a basis for the alignment of the strategic objectives of the two parties.

For policy reasons, this information needs to be set into the context of all potential benefits available from fish resource exploitation. This will enable synergies to be recognized. For example, maximizing wealth on a sustainable basis will result in far larger fish stock sizes, meeting ecological objectives and increasing the resilience of the system. At the same time, there may be tensions between wealth and some other objectives (e.g. direct fishing employment) and policy-makers will need to take these into consideration.

### Breakdown by resource type

The initial estimate presented above for African fish resources as a whole is illustrative but for policy application more precise estimates are needed using policy-relevant units.

Various breakdowns are possible. For example, it will be useful to have very broad estimates concerning each of the marine, inland and aquaculture sub-sectors. Such information may alter policy perceptions, for instance that marine capture fisheries are now of less importance because they have reached their quantitative production limit.

It will be necessary to go beyond the sectoral level and consider outcomes on a fishery by fishery basis. Given the very large number of fisheries in Africa, it becomes clearer why reform can only be a very gradual process.

### Implication for different users

Undertaking participatory development of the information will clarify the implications for different resource users. It is possible, likely even, that there will be some losers in a move towards a wealth approach even if overall the gains are substantial. Decision-makers will need to determine the appropriate measures to take, drawing where appropriate on the experience of other sectors of the economy that have faced similar issues.

There is likely to be particular interest in the implications for “large-scale” and “small-scale” fishers. At the same time, it will be useful to investigate the extent to which such characterizations are useful as policy entry points or whether the ultimate objectives are better achieved in other ways (e.g. by including all fishers regardless of scale in the common framework for certain resources at least).

### Communication

Information should be communicated to the full range of stakeholders in order to define as accurately as possible the wealth generating opportunities for African fisheries and to increase understanding of the policy choices and trade-offs.

Issues relating to fish resource wealth should gradually become part of the standard reporting suite from Ministries, in the same way that information provided on the level of catch, trade, employment and so on.

Identifying the fiscal contribution of the sector and investments (especially in public infrastructure – schools, roads, hospitals etc) made on the basis of fish wealth is likely to be of increasing interest to both the public and private sectors.

### Capacity-building

The generation of the knowledge outlined above will require capacity-building through recruitment and training coupled with international support, for instance through mentoring systems.

### 3. Conclusions

The exploitation of African fish resources is typically valued in terms of physical output (e.g. production, employment, food supply and trade).

However, these resources are a form of natural capital and a valuable asset capable of generating wealth (or resource rent).

International experience based on an increasing number of countries shows that reforming fisheries enables this wealth to be generated on a substantial and sustainable basis (billions of dollars) and that it can be grown even further in the future.

An important starting point for future fisheries reform in Africa is a better knowledge of fisheries wealth opportunities and this paper has outlined how such knowledge might be generated.

Fish resource wealth itself can be an important building block for pro-poor economic growth and sustainable development, but this depends on appropriate governance arrangements being in place (both policy and fisheries management systems). The following paper considers these issues.